METHOD AND APPARATUS FOR VIABLE AND NONVIABLE PROKARYOTIC AND EUKARYOTIC CELL QUANTITATION

ABSTRACT OF THE DISCLOSURE

A rapid method for the quantitation of various live cell types is described. The method may include a variety of steps including: 1) suspending the cells in a detergent-like compound, 2) isolating the washed cells by centrifugation or filtration, 3) resuspending the cells in a solution that contains a preservative, a fluorescent dye and a compound such as dequalinium which can be taken up by the cells, 4) measuring the fluorescence increase over time of the cell-dye mixture with a simple fluorometer, and 5) measuring the native fluorescence of the cells. This new cell fluorescence method correlates with other methods of enumerating cells such as the standard plate count, the methylene blue method and the slide viability technique. The method is particularly useful in several applications such as: a) quantitating bacteria in milk, yogurt, cheese, meat and other foods, b) quantitating yeast cells in brewing, fermentation and bread making, c) quantitating mammalian cells in research, food and clinical settings. The method is especially useful when both total and viable cell counts are required such as in the brewing industry. The method can also be employed to determine the metabolic activity of cells in a sample. The apparatus, device, and/or system used for cell quantitation is also disclosed.

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